SKYROSE MARKETING AGENCY: PREDICTING CONSUMER DEMAND

In December 2015, Cynthia Wright, a vice-president at Skyrose Marketing Agency (Skyrose), had just finished reviewing a summary of her team's performance for the past year. As head of the group responsible for beverage industry clients, she had led her team of four associates to achieve excellent results in revenue generation and client satisfaction. Despite these successes, she was determined to develop a plan for the upcoming year that would enable her to better manage her team while still delivering results.

Wright noted that in the past year, her team's quality of life had suffered as she worked to grow her client book, particularly due to the cyclical nature of the marketing business. Around peak times, such as the holidays, her team members became overwhelmed both from completing projects for existing clients and generating new clients by responding to numerous requests for proposals. Wright was eager to devise a method for smoothing out the workload between peak and quiet periods of the year by better forecasting her clients' needs ahead of time.

Specifically, she was planning to implement the new technique Google Trends, a database of search trends that spanned the past decade and that could be used to proxy consumer interest in different products. Wright believed that by forecasting consumer interest, she could predict demand from her clients, whom she anticipated would engage her firm to capture this consumer interest. As a result, Wright would be able to address two key problems. First, staffing decisions and firm resource allocation could be predicted ahead of time, giving her team members time to prepare for upcoming projects. Second, Wright could deliver better results for her clients by anticipating the timing of consumer demand and developing marketing plans around these timelines.

Wright planned to use the upcoming calendar year as a trial for the Google Trends approach for forecasting demand. To test its efficacy, she would assess its influence on three key clients: Vintage Vino, On The Rocks Whiskey, and Downtown Brew Co.

THE BEVERAGE CLIENTS GROUP

Skyrose's staff members consisted of four associates plus Wright. Each associate had several years of experience in marketing or advertising. They were all well-versed in the beverage products marketing market segment. The team's work could be generally divided into two functions: (1) gaining new business

by networking and responding to requests for proposals from potential new clients, and (2) maintaining recurring business by completing projects for existing clients. Although many ongoing projects had to be completed under a time-sensitive schedule, some functions such as networking, project preparation, and relationship building with old clients could be completed at any time throughout the year. Wright compiled all employee work hours from the previous year (see Exhibit 1).

CLIENTS

Wright was planning to implement this initiative with three key companies: two current clients (Vintage Vino and On The Rocks Whiskey) and one prospective new client (Downtown Brew Co.).

Vintage Vino, a Canadian wine producer and distributor, had been working with Skyrose for the previous three years. As a leader in the wine market segment, the company was planning the release of a new white wine in the upcoming year. However, the company was unsure when exactly to release the new product to maximize sales.

On The Rocks Whiskey was a Vancouver-based distributor of whiskey that worked closely with producers throughout the country to source the best products for consumers. The company had seen incredible success in sales in the previous year and credited this growth partially to the work of Wright and her team. As a loyal client, On The Rocks Whiskey was likely to seek direction from Skyrose on upcoming industry and consumer trends.

Downtown Brew Co. was a rising star in the craft beer industry. As Wright was recently informed, the company was planning to expand its presence from Ontario to various other Canadian provinces. The company was not currently a Skyrose client, but Wright had a strong desire to win Downtown Brew Co.'s business. The company was experiencing exponential growth and would likely be looking for a marketing agency in the upcoming year.

GOOGLE TRENDS

Google Trends was a database that tracked search queries and the relative popularity of queries over time.[1] The online platform contained data from 2004 onward. It contained search trends that could be segmented by geography and time, down to minute-by-minute results (see Exhibit 2). A specific period of Google Trends data could be exported, with search data scaled relative to the highest search volume within that time frame. The Google Trends database had shown great promise for numerous applications in the past. It was even used to make predictions about influenza outbreaks, in an attempt to slow the spread of the flu virus.[2]

Although Wright had never personally used Google Trends, she had read about the impressive applications of this tool. Particularly, she was curious about how effectively search queries could be used as a proxy for measuring consumer demand at a particular time, and how well future consumer demand could be forecasted by analyzing this data. However, she was concerned that Google Trends data was simply a collection of search term frequencies over time.

Any conclusions based on this data would be subject to other variables affecting search trends. Additionally, the data set only returned *relative* search popularities, instead of *actual* search frequencies, making it difficult to quantify results in absolute numbers. Wright wondered how she could use Google Trends data to forecast actual sales volume for her clients to more effectively inform her decision-making for the upcoming year.

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[1] "FAQ about Google Trends," Google, accessed February 17, 2021, https://support.google.com/trends/answer/4365533?hl=en.
[2] "Reappraising the Utility of Google Flu Trends," PLOS Computational Biology, accessed February 20, 2021, https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1007258.

THE FORECASTING DILEMMA

Wright downloaded search data from Google Trends for three search terms related to her clients' key products: "White Wine," "Whiskey," and "Craft Beer." Several questions came to mind as she reviewed the Google Trends data. What did the trends and seasonality for each product look like? How could the data be used to forecast future consumer demand? How would this data translate into better managerial and marketing decisions?

As Wright planned for the upcoming year, she knew she would have to improve her team's morale, while also meeting client needs in a more proactive way. Wright also had to assess the effectiveness of Google Trends in predicting consumer demand for upcoming years. She dug out her time series analysis notes from her university days, and got to work.

EXHIBIT 1: EMPLOYEE WORK HISTORY, 2015

	Employee	Cynthia Wright	Stephanie Williams	Raj Dewan	Chris Zhou	Nicola Mancini	**Days Available**
	Position	VP	Creative	Creative	Technical	Technical	
January	**Available Hours**	168	168	168	168	168	21
	Actual Hours	160	159	159	152	153	
February	**Available Hours**	160	160	160	160	160	20
	Actual Hours	157	154	157	157	155	
March	**Available Hours**	176	176	176	176	176	22
	Actual Hours	177	173	178	176	177	
April	**Available Hours**	176	176	176	176	176	22
	Actual Hours	176	179	171	170	170	
May	**Available Hours**	160	160	160	160	160	20
	Actual Hours	174	172	169	171	168	
June	**Available Hours**	176	176	176	176	176	22
	Actual Hours	179	173	178	178	172	
July	**Available Hours**	176	176	176	176	176	22
	Actual Hours	179	179	183	176	182	
August	**Available Hours**	160	160	160	160	160	20
	Actual Hours	161	166	161	169	166	
September	**Available Hours**	168	168	168	168	168	21
	Actual Hours	165	162	155	157	159	
October	**Available Hours**	176	176	176	176	176	22
	Actual Hours	175	162	160	159	168	
November	**Available Hours**	168	168	168	168	168	21
	Actual Hours	185	175	180	175	177	
December	**Available Hours**	168	168	168	168	168	21
	Actual Hours	197	200	200	201	195	

Note: VP = vice-president.
Source: Created by the case authors.

EXHIBIT 2: EXAMPLE OF GOOGLE TRENDS OUTPUT FOR WHISKEY

Year	Month	Relative Interest*
2010	1	41
2010	2	42
2010	3	44
2010	4	41
2010	5	39
2010	6	36
2010	7	39
2010	8	39
2010	9	39
2010	10	40
2010	11	43
2010	12	55
…	…	…
2015	1	74
2015	2	69
2015	3	73
2015	4	65
2015	5	66
2015	6	67
2015	7	67
2015	8	69
2015	9	63
2015	10	65
2015	11	87
2015	12	100

Note: *From Google Trends: "A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term."
Source: "Whiskey," Google Trends, Explore, accessed April 2, 2021, https://trends.google.ca/trends/explore?date=2010-01-01%202015-12-31&geo=CA&q=Whiskey.